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DIABETIC PATIENTS' KNOWLEDGE AND PRACTICES ABOUT DIABETIC FOOT CARE IN MAKKAH CITY, SAUDI ARABIA

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Abstract:

Background:

According to National Center for Biotechnology Information (NCBI) 23.7 % of Saudis are diabetics. Diabetic foot is a chronic complication of diabetes. The incidence of non-traumatic lower extremity amputations is at least 15 times greater in those with diabetes than non-diabetics. Patient education is important to reduce lower extremity complications.

Objectives:

The aim of this study is to assess the knowledge, attitudes, practices and risk factors influencing diabetic foot ulcers among diabetes patients attending diabetic clinics in a Saudi hospitals.

Methods:

This cross-sectional survey was carried out in Makkah Region of Saudi Arabia from March to May 2017. Diabetic patients attending various hospitals and clinics in Jeddah and Rabigh were requested to voluntarily answer a questionnaire. The outcome variables were knowledge and practice regarding foot care, the data was analyzed on SPSS.

Results:

181 diabetic patients including 122 males and 59 females participated in study with a male to female ratio of 2:1. Diabetic foot ulcers were observed in 13.3% of these patients. Majority of participants had good education and favorable attitudes towards diabetic foot care. Interestingly, despite good knowledge, a high percentage of participants ignored instructions before buying new shoes.

Conclusion:

All patients with diabetes mellitus should be educated regarding diabetic foot complications and care to improve knowledge and attitudes. This improvement can be achieved by awareness programs for the early detection and care of diabetic foot problem.

Keywords: *Diabetic Foot Care, Foot ulcer, Knowledge, Practices.*

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INTRODUCTION:

Diabetes mellitus is a multifaceted disease. Worldwide, 346 million people suffer from diabetes, and foot ulceration is one of its most common complications. It has been reported that nearly 70% of non-traumatic amputations were performed due to a diabetic foot. [1]

Diabetes is also very common in Saudi Arabia. According to National Center for Biotechnology Information (NCBI) 23.7 % of Saudis are diabetics. [2]

Diabetic foot ulcer is defined as any necrosis, gangrene, or full-thickness skin defect occurring distal to the ankle in a diabetic patient. [3] Studies suggest that 2.5% of diabetic patients develop a diabetic foot each year, and 15% of them develop a diabetic foot during their lifetime. [4]

Diabetic foot is the most frequent cause of hospitalization for diabetic patients, representing up to 25% of all hospital admissions of diabetic patients [5]. In addition, reports show it has significant negative impacts on patients, it lowers the quality of life with respect to psychological and physical performance compared with the general population and it incurs significant costs for health services [6]. Moreover, the mortality rate of patients with a diabetic foot has been found to be higher than that of those without a diabetic foot [7].

The incidence of diabetes is high among the Saudi population, and diabetes represents a major clinical and public health problem [8]. Diabetic foot ulcers were prevalent in 13.5% of the diabetic patients referred to the nephrology clinic [9] and in 7.7% of patients undergoing chronic hemodialysis [10].

Clinical trials related to diabetic foot problems are more often focused on therapeutic or diagnostic issues than on prevention. Al Maskari et al. reported that among the main risk factors for developing a diabetic foot in the United Arab Emirates was having a poor level of education [5].

In KSA, the overall control rate and awareness are still less than is desirable. Aljoudi et al. documented that there is poor knowledge of preventive measures for complications related to diabetes among Saudi patients in the Eastern Province [11].

Thus, diabetic foot ulcers are highly complicated and are a serious problem for the community, as well as the patients themselves. Previous reports found that identifying people at high risk and managing the risk factors early can reduce the outcomes of diabetic foot ulcers and lower extremity amputations [12].

We have designed this study to assess the knowledge, attitudes and practices regarding foot ulcer care among patients attending to hospitals in the west Province. We hope that the information gained on the knowledge and practices regarding foot ulcer care can help health care providers to develop targeted self-management education programs for people with diabetes.

MATERIALS AND METHODS:

This cross-sectional survey was carried out in Makkah Region of Saudi Arabia from March to May 2017. Diabetic patients attending various hospitals and clinics in Jeddah and Rabigh were requested to voluntarily answer a questionnaire. The Questionnaire was designed to assess the knowledge and attitudes towards foot self-care among diabetic patients.

INCLUSION CRITERIA:

All patients over 18 years of age, both male and female, diagnosed with type I or type II diabetes for at least six months.

Questionnaire

Data were collected through a structured interview questionnaire including 19 questions regarding knowledge and practices about self-foot-care. It also included some personal information like occupation, education and socio-economic status. The questionnaire was prepared using the recommendations of the American College of Foot and Ankle Surgeons and Diabetes UK and that used in previous studies [13,14]. The questionnaire was translated into Arabic. Closed-ended questions were included with three or more answering options. Answering option "No" always preceded option "Yes".

Collection of data:

The questionnaire was distributed among patients who volunteered to participate, it was filled in by the researcher. Every participant had the right to withdraw whenever he wished or had the choice to not answering any particular question.

Data analysis:

The data were analyzed with SPSS software. Percentages and proportions were used to describe categorical variables while means and standard deviations were calculated for numerical variables.

RESULTS:

181 diabetic patients including 122 males and 59 females participated in study with a male to female ratio of 2:1. 58 % of patients were above the age of

50 years while 42% were below 50, 50.8% had secondary or tertiary level education while 49.2% had primary or below. Diabetic foot ulcers were observed in 13.3% of diabetic patients. 92.3% patients were diagnosed with type 2 diabetes mellitus and 7.7% diagnosed with type 1 diabetes mellitus and 32% had developed poor vision while 31.5% had neuropathy.

Knowledge of foot care:
Concerning knowledge of diabetic foot ulcers, the majority of study participants had good education and favorable attitudes towards diabetic foot care. Interestingly, the results showed that despite this, a high percentage of the participants ignored very important information and advice before buying new shoes. (Fig 1)

Practice of foot care:
More than half of the respondents (76.2%) regularly inspect their feet (67.4%) regularly wash their feet with warm water and (52.5%) inspect the inside of their footwear
The distribution of response to questions related to the practice of foot care is shown in Fig 2 and 3

In response to the question what they should they do in case of redness or bleeding, 88.4% participants responded that they will go to hospital, while 9.4% will treat at home and 2.2% will do nothing.

DISCUSSION:

The present study discloses important information on the diabetic foot in the western Province of KSA. The study shows that the majority of the study's participants had good education and favorable attitudes towards diabetic foot care, although the results showed that a significant number of diabetic patients (13.3%) had a diabetic foot. Incidence of the diabetic foot is higher among Arab countries and KSA than in western regions [15]. Furthermore, a possible explanation for this high prevalence of diabetic foot problems among patients in the Eastern Province might be related to diabetic foot self-care practices and diabetes-related knowledge as reported by the participants. While a very high percentage of patients still ignored important information and did not receive any advice for selecting footwear, this knowledge is important, as disregarding it can lead to impaired/delayed wound healing, increasing the odds of having diabetic foot ulcers.

The weather in KSA is mostly dry and hot throughout the year, which makes wearing sandals to avoid the heat a highly common habit. There are many types of sandals, but they have common effects. Such footwear is not a good protector from injuries because the foot is exposed to heat, dryness and injuries and there is a ridge-like part that is commonly seen between the first and second toe. This ridge causes friction and injury that is not appreciated by the naturopathic senseless foot and is the nidus of the problem [15].

This increased risk among those who use sandals or ill-fitting shoes might be related to high frequencies and chances of foot trauma, which may result in subsequent diabetic foot ulceration. Walking barefooted, especially indoors, is still a common habit. This habit is another factor in developing diabetic foot infections and complications. Moreover, the lifestyle in KSA is sedentary due to such factors as the weather's being hot, humid or very cold, meaning that walking is difficult, and that people depend on riding. This lifestyle may have a negative effect on glycaemic control and diabetic foot problems [16].

Studies show that beside education level, the length of disease duration, cardiovascular disease and poor glycaemic control were the main risk factors for developing a diabetic foot[4]. Diabetic patients have a high risk of atherosclerosis and, in combination with retinopathy, diabetic patients are more prone to accidents and trauma that would be a cause of foot ulceration. Previous studies conducted in Makkah, KSA reported that 86% of diabetic foot problems were due to diabetes with cardiovascular complications [17].

Lack of training programs and awareness among health care providers, lack of a concept of a team approach for treatment of complicated foot issues and lack of quality assurance programs could be other possible causes for poor outcomes in cases of foot complications in diabetic patients [18].

The encouraging finding is that most of the participants in the western Province demonstrated good attitudes and awareness regarding issues related to diabetes mellitus and the diabetic foot. In addition, participants were educated to seek immediate medical advice when they found any lesions on their feet.

A diabetic foot is one of the main causes of amputation and its subsequent emotional and physical problems. Poor diabetic foot care is one of the risk factors for developing a diabetic foot and requiring amputation [19]. Previous studies in different countries have reported that increasing awareness of diabetic foot care, proper management and prevention resulted in a 50% reduction in

diabetic foot problems and their consequences [20,21]

CONCLUSIONS:

This cross-sectional study can be considered as a preliminary study identifying diabetic foot self-care practices and diabetes-related knowledge as influential factors for the development of a diabetic foot. However, levels of knowledge, attitudes and practices among diabetic patients may be improved with community awareness and training programs

RECOMMENDATION:

All patients with diabetes should be educated on diabetic foot complications and footwear. Increasing awareness of the diabetic foot will no doubt have a significant impact on reducing the rate of amputation and patients should receive an annual foot examination to identify high-risk foot conditions. It is important that health care providers should be aware of the importance of giving advice about footwear to all people with diabetes apart from foot care and education.

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Fig 1 Knowledge of patients about foot care

Fig 2 Patients' practices regarding foot care

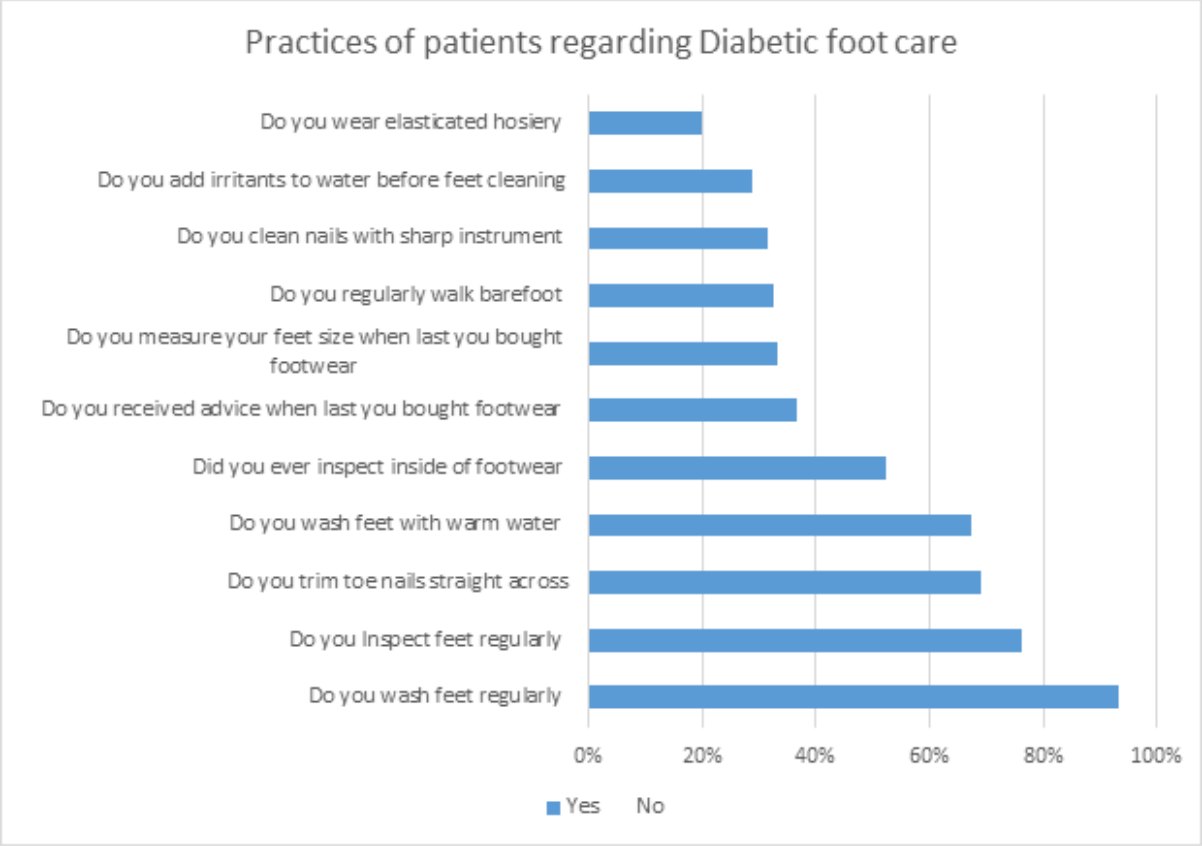
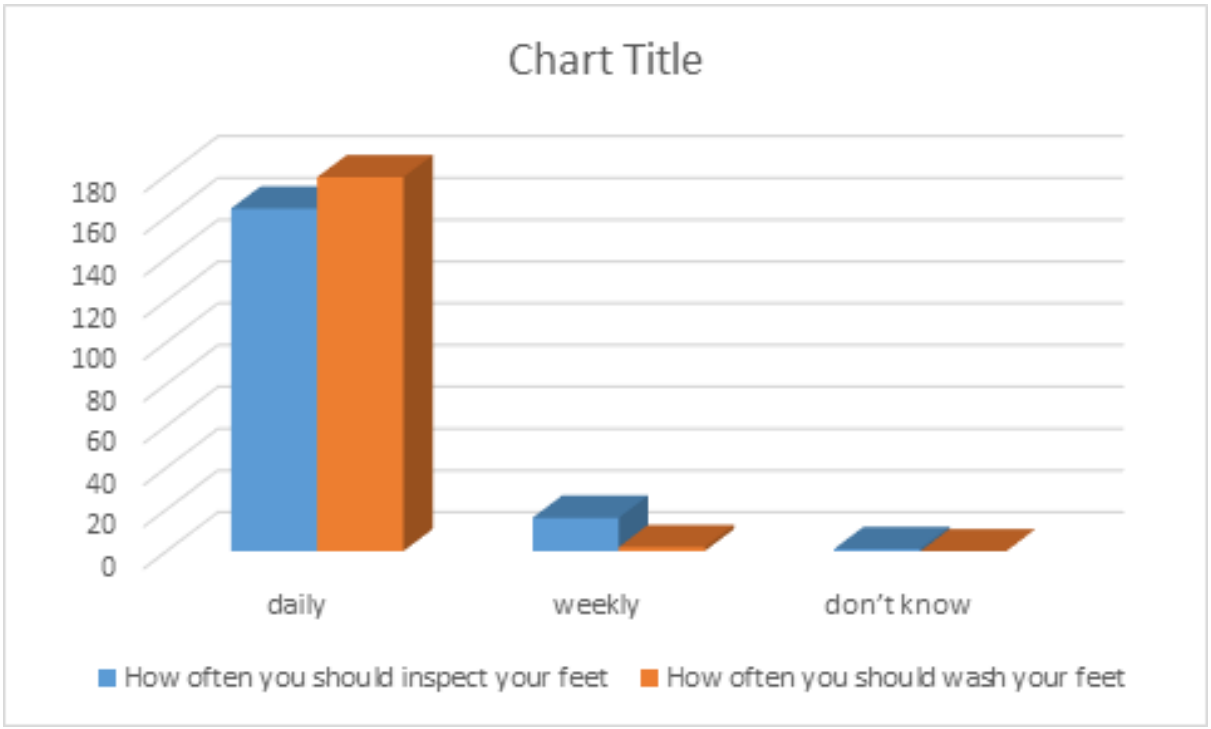


Fig 3 Frequency of foot inspection and washing



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